

AMENDMENTS TO THE CLAIMS

1-25. (Canceled)

26. (Original) A swirl disk for a spray nozzle comprising:

a sheet material substrate defining a first surface formed on one side of the substrate, a second surface formed on an opposite side of the substrate relative to the first surface, a side surface extending between the first and second surfaces and defining a peripheral edge of the swirl disk, a swirl chamber defined by a first aperture extending through a first region of the substrate spaced inwardly relative to the peripheral edge, and a swirl inlet defined by a second aperture formed through a second region of the substrate extending between the swirl chamber and peripheral edge.

27. (Original) A swirl disk as defined in claim 26, wherein the first and second surfaces are substantially symmetrical about a plane approximately perpendicular to an axis of the swirl disk.

28. (Original) A swirl disk as defined in claim 27, wherein the first and second surfaces are substantially identical.

29. (Original) A swirl disk as defined in claim 26, wherein at least one of the first and second surfaces is substantially planar throughout.

30. (Original) A swirl disk as defined in claim 26, wherein the swirl chamber defines a throat ratio of approximately 3:5 through approximately 11:10.

31. (Original) A swirl disk as defined in claim 26, further defining a plurality of swirl chambers and a plurality of corresponding swirl inlets, wherein each swirl inlet extends between a respective swirl chamber and a peripheral edge of the swirl disk.

32. (Original) A swirl disk as defined in claim 26, in combination with an orifice disk comprising:

a sheet material substrate defining a first surface formed on one side of the substrate, a second surface formed on an opposite side of the substrate relative to the first surface, a side surface extending between the first and second surfaces and defining a peripheral edge of the orifice disk, and a spray orifice extending through a first region of the substrate spaced inwardly relative to the peripheral edge.

33. (Original) A swirl disk for a spray nozzle comprising:

a sheet material substrate defining a first surface formed on one side of the substrate, a second surface formed on an opposite side of the substrate relative to the first surface, a side surface extending between the first and second surfaces and defining a peripheral edge of the swirl disk, first means extending through a first region of the substrate spaced inwardly relative to the peripheral edge for forming a swirling flow of fluid within the swirl disk, and second means extending between the first means and peripheral edge for directing fluid into the first means.

34. (Original) A swirl disk as defined in claim 33, wherein the first means is defined by a first aperture extending through the swirl disk and forming a swirl chamber therein.

35. (Original) A swirl disk as defined in claim 33, wherein the second means is defined by a second aperture extending through the swirl disk and defining a flow inlet extending between the first means and a peripheral edge of the swirl disk.

36-38. (Canceled)

39. (Original) A swirl disk as defined in claim 26, wherein the swirl disk defines a thickness within the range of about 0.003 inches through about 0.03 inches.

40. (Original) A swirl disk as defined in claim 39, wherein the swirl disk defines a thickness within the range of about 0.005 inches through about 0.015 inches.

41. (Original) A swirl disk as defined in claim 26, wherein the swirl disk further defines a throat formed between the swirl inlet and swirl chamber, the swirl chamber defines a start radius, and the ratio of the throat divided by the start radius is within the range of about 0.6 through about 1.1.

42. (Original) A swirl disk and orifice disk as defined in claim 32, wherein the orifice disk defines a thickness within the range of about 0.005 inch through about 0.03 inch.

43. (Original) A swirl disk and orifice disk as defined in claim 32, wherein the ratio of the axial depth of the spray orifice (L) to a diameter of the spray orifice (D) is within the range of about 0.16 through about 6.

44-45. (Canceled)

46. (Original) A swirl disk for a spray nozzle formed in accordance with a method comprising the steps of:

providing a sheet of material for forming the swirl disk therefrom;

forming at least one swirl disk from the sheet of material by (1) removing material about a peripheral portion of the swirl disk and, in turn, forming a peripheral edge of the swirl disk, (2) removing material from at least one first region of the swirl disk spaced inwardly relative to the peripheral edge of the swirl disk and, in turn, forming a first aperture extending through the first region and defining a swirl chamber, and (3) removing material from at least one second region of the swirl disk extending between the swirl chamber and peripheral edge of the swirl disk and, in turn, forming a second aperture extending through the second region and defining a flow inlet to the swirl chamber.

47-52. (Canceled)

53. (New) A swirl disk and orifice disk as defined in claim 32, in further combination with:

a body defining an inlet aperture and an outlet aperture, wherein the orifice disk is receivable within the body with the spray orifice aligned and coupled in fluid communication with the outlet aperture of the body; and

a retaining member receivable within the body adjacent to the swirl disk for retaining the swirl disk and orifice disk within the body, wherein the retaining member defines a fluid flow path coupled in fluid communication between the inlet of the body and the inlet of the swirl disk for directing fluid flowing through the inlet of the body into the swirl chamber and, in turn, imparting a swirling flow to the fluid prior to discharging the fluid through the spray orifice in spray pattern emanating therefrom.

54. (New) A spray nozzle as defined in claim 53, in further combination with:

a filter receivable within the body in fluid communication with the fluid flow path defined by the retaining member for filtering fluid flowing through the inlet aperture of the body prior to passage through the swirl chamber.